

CLAIMS:

1. A system for manipulation of a small object comprising
a substrate to receive the small object (3), a liquid droplet (4) that evaporate,
which droplet (4) carries the small object (3) on the substrate,
a pre-treated surface structure of the substrate in the vicinity (1,2) of the
5 placement position of the small object (3), wherein the small object is moved to a well-
defined placement position (1) by the evaporation of the droplet (4).
2. A system for manipulation of a small object as claimed in Claim 1, wherein
the surface structure of the substrate is pre-treated chemically in that way, that the final
10 placement position (1) of the object is modified to make it good-wetting and that the near
vicinity (2) of the placement position of the small object (3) is poor-wetting to make contrast
in wettability on the substrate near the placement position (1,2) of the small object (3).
3. A system for manipulation of a small object as claimed in Claim 2, wherein
15 the contrast in wettability of substrate is provided by a monolayer of a suitable molecule,
which monolayer is made by micro-contact printing.
4. A system for manipulation of a small object as claimed in Claim 1 to 3,
wherein the small (3) object is pre-treated by a monolayer to make the side (5) of the object
20 (3) in contact with the substrate hydrophilic.
5. A system for manipulation of a small object as claimed in Claim 1 to 3,
wherein the small object (3) is pre-treated by a dissolvable layer.
- 25 6. A system for manipulation of a small object as claimed in Claim 1, wherein
the surface structure of the substrate is pre-treated physically, in that way that the edge of the
fluid meniscus is guided by grooves and ridges of the physically pre-treated structure to the
final placement position of the small object.

7. A system for manipulation of a small object as claimed in one of the foregoing Claims, wherein the object (3) is aligned to match to the placement position (1) by means of a magnetic field.

5 8. A system for manipulation of a small object as claimed in one of the foregoing Claims, wherein the placement position (1) on the substrate has a shape which corresponds to the shape of the small object (3), so that the object (3) is aligned to match with the final placement position (1) during evaporation of the droplet (4).

10 9. A method of manipulation of a small object having a

- a substrate with a pre-treated surface structure to receive the small object (3), which object (3) is pre-treated by a monolayer to make the side (5) of the object (3) in contact with the substrate hydrophilic,
- placing the small object by rough placement of the object on the substrate somewhere
- 15 around the final position (1) of the object (3),
- placing a droplet (4) on the substrate in the vicinity of the final position (1) of the small object,
- dissolving of the object (3) in the droplet (4) that the object can freely float in the liquid,
- moving the droplet (4) from the poor wetting area to the good wetting area and
- 20 - positioning the object (3) to the proper position (1) by the evaporation of the droplet,
- interconnecting the object (3) by standard lithographic way.